UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,025	02/17/2004	Wenbin Gu	8540G-000187	9272

27572 7590 12/10/2007

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER	
WALKER, KEITH D	
ART UNIT	PAPER NUMBER
1795	
MAIL DATE	DELIVERY MODE
12/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
10780025	2/17/2004	GU ET AL.	8540G-000187

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER	
Keith Walker	
ART UNIT	**PAPER**
1795	20071130

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

The Reply Brief filed 9/11/07 is accepted and entered into the record.

Appellant filed new arguments in reply to the new rejections in the Examiner's Answer filed 7/11/07. As noted by appellant the new rejections were not new rejections but elaborations on previously presented rejections over the same art as has been applied though the examination.

The following reply is in response to the new arguments presented by the appellant in the Reply Brief of 9/11/07. While the same argument is repeated though out the reply brief, the subject matter of the argument will only be addressed once here.

Applicant argues "selectively picking certain aspects of the prior art, while ignoring other aspects of the teachings of the same prior art, fundamentally defies an obviousness inquiry and is verboten." (Page 7 of Reply Brief, 1st paragraph). While it is unclear exactly what "aspects of the teachings of the same prior art" are ignored, the rejections of the instant claims is made over the combined teachings of Miyazawa, Yamada and Davis. The arguments presented address the references individually and do not rebut the combined teachings of the references.

Appellant argues Miyazawa doesn't teach "providing an overall hydrophilic membrane 14 (as opposed to one of several material contained the coating) having sufficient electrical conductivity to be employed within an active area of a fuel cell" (Page 8 of Reply Brief, bottom of 1st paragraph). These features are not required by the instant claims. For instance, nothing in the claims requires an overall layer as opposed to one of several materials. "Sufficient electrical conductivity" is also not recited in the claims or part of the instant disclosure.

Appellant argues multiple times that Yamada doesn't teach an electrically conductive wicking material and only teaches a non-conductive wicking material since a conductive material would short-circuit the fuel cell. In the Yamada reference, all passages cited by the appellant to support Yamada teaching a non-conductive wicking material is true, for that particular part of the fuel cell. In all of the cited passages, Yamada teaches placing a wicking material across the edge portion of all the electrodes, anode and cathode, in the stack so the water can be drawn away from the electrodes. If this material was conductive, the fuel cell would short out since it would be equivalent to placing a conductor across the positive and negative terminals of a battery. In a similar manner, Yamada teaches supplying the fuel cell with another wicking material that lays across all of the edge portions of the electrodes in the fuel cell stack and supplies the anode with fuel. This wicking material used to supply the fuel is not conductive for the same reason. However, Yamada's invention is drawn to creating a fuel cell that can operate using capillary action to supply the fuel and oxidant to the fuel cell and to remove the effluent (i.e., water) from the fuel cell. Using the cathode as an example, Yamada teaches forming the cathode

"itself with a porous member and effect the removal of the water formed on the oxidizing electrode by the capillarity manifested by the porous member." (Yamada, 10:45-50). The electrodes are also taught to be conductive, "Here, the fuel electrode 2 and the oxidizing electrode 3 are both formed of a conductive porous material" (Yamada, 15:19-20). Yamada again teaches the conductive and porous nature of the electrodes, "the fuel electrodes (porous material of such metal as nickel) have an average pore diameter of about 30 microns. As respects the path for recovery of water, the oxidizing electrode (porous material of such a metal as nickel)" (Yamada, 39:17-21).

So, while one part of the fuel cell is taught to be non-conductive, as pointed out by appellant, when the whole reference is taken into consideration, Yamada teaches not only the appropriate times to make and use a non-conductive wicking material but also when to make and use a porous conductive wicking material. Therefore, Yamada teaches that an appropriate time to use the porous conductive wicking material is for materials in the 'active flow field'. (Appellant's term on page 9 of Reply Brief). Furthermore, as discussed in the Examiner's Answer of 7/11/07 the porous conductive layers located in the 'active flow field' are already taught by Miyazawa and the Yamada reference is used to teach pore sizes, which do not depend on the conductivity of the material. The combined teachings of Miyazawa and Yamada obviate the claimed invention.

Appellant argues a liquid distribution media overlying substantially all of the major surfaces of the electrically conductive impermeable element is not taught by the prior art. Applicant states that the drawings are only "a diagrammatic representation of the device and does not necessarily represent accurate dimensions." (Page 12 of Reply Brief). However, appellant uses the same drawings to refute the 75% coverage by saying the drawing only covers 50% of the surface. Therefore, while the drawings are not necessarily to scale, it would be obvious to one skilled in the art to understand from the drawings how much of the surface is covered by the liquid distribution media. So appellant states only 50% of the conductive element is covered since the material is removed from the top of the ribs. Appellant has not included the sides of the undulating surface and so three of the four available surfaces are covered and therefore 75% (substantially all the major surface) of the electrically conductive impermeable element is covered.

The rest of the arguments presented in the Reply Brief of 9/11/07 are addressed by the Examiner's Answer of 7/11/07 and therefore are not repeated here.

KEITH WALKER
PATENT EXAMINER
ART UNIT 1795

MARK RUTHKOSKY
PRIMARY EXAMINER

12·1·2007